J. T. FINLEY.

ACETYLENE GAS GENERATOR.

APPLICATION FILED JAN. 6, 1911.

995,242. **Patented June 13. 1911.**

Fig. 1.

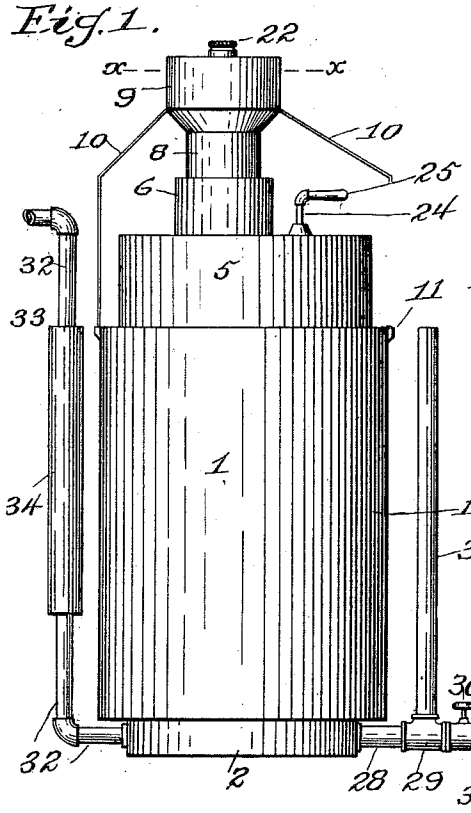


Fig. 2.

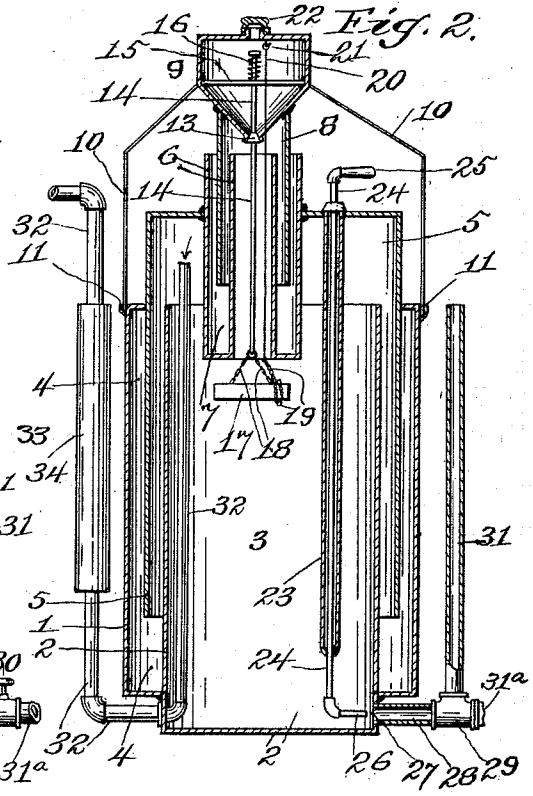


Fig. 3.

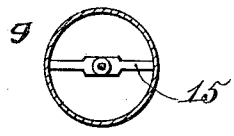


Fig. 4.

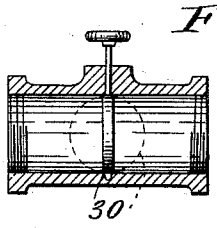


Fig. 5.

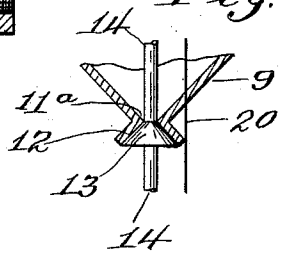


Fig. 7.

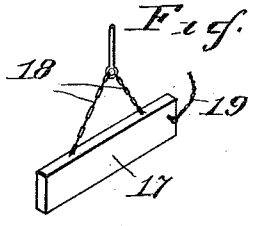
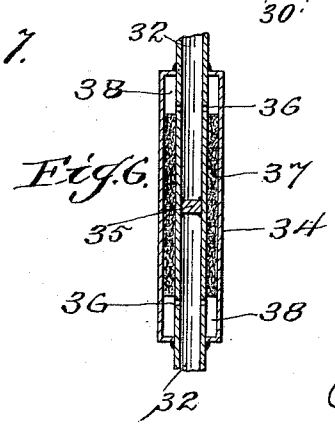


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

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ACETYLENE-GAS GENERATOR.

995,242. Specification of Letters Patent. Patented June 13, 1911.

Application filed January 6, 1911. Serial No. 601,078.

To all whom it may concern:

Be it known that I, JESSE T. FINLEY, citizen of the United States, residing at Rule, in the county of Haskell and State of Texas, have invented certain new and useful Improvements in Acetylene-Gas Generators, of which the following is a specification.

This invention relates to acetylene gas generators, and pertains especially to certain novel and peculiar features combined therein as to produce advantageous results in the operation thereof.

The object of the invention is to provide novel and peculiar means for withdrawing waste during the operation of the generator without admitting air thereinto.

A further object of the invention is to provide special arrangement of the feed hopper, novel means for supporting the hopper, and novel means for opening and closing the hopper without permitting escape of gas therethrough.

A still further object of the invention is to provide a novel and peculiar agitator or stirring device adapted to be operated within the generator from the outside of the latter.

Various other objects, advantages, and improved results will be found attainable in the practical operation of the generator.

In the accompanying drawings forming a part of this application: Figure 1 is an elevation of a gas generator constructed and arranged according to my invention. Fig. 2 is a central vertical section of the generator. Fig. 3 is a detail sectional view of the hopper on the line X X Fig. 1. Fig. 4 is a detail sectional view of the gate or valve. Fig. 5 is a detail sectional view of the valve-portion of the hopper. Fig. 6 is a detail sectional view of the filter. Fig. 7 is a perspective view of the plate connected with the valve stem.

The same reference numerals denote the same parts throughout the several views of the drawings.

An outer cylinder 1, is soldered or otherwise secured to and around an inner cylinder 2 so as to leave the lower end of the cylinder 2 projecting from the bottom of the cylinder 1, for purposes hereinafter set forth. The cylinder 2, forms a water reservoir 3, and a water chamber 4, is formed by and between the cylinders 1 and 2. A cylindrical bell 5, having an open bottom and a closed top, is operated in and above the water chamber 4, and has a central double cylinder 6 secured thereto and projecting above and below the top of the bell 5, and said cylinder 6 forms a water chamber 7 into which a tube or pipe 8 depends from a carbid feed hopper 9. The carbid hopper 9 is supported centrally over the bell-cylinder 6, by means of two or more rods 10, attached to the hopper and secured in sockets 11 on the outside of the cylinder 1. The hopper has a funnel-shaped portion extending into its pipe 8 and the bottom of said portion has an opening 11^a surrounded by a valve-seat 12, for a conical feed valve 13, on a stem 14 which extends through a guide-piece 15 in the hopper, and a spiral-spring 16 is interposed between the head of the stem and the said piece, said spring being inclosed in the practical working of the apparatus so as to prevent its contact with the carbid as the latter is fed through the hopper. The lower end of the stem 14 carries a plate 17 which is hung from the stem by means of a chain 18, and said plate is connected with the top of the hopper by a chain 19, and a wire 20 extending through the hopper and attached to the top of the latter by a hook 21. The length of said plate is greater than the diameter of the central passage or opening of the cylinder 6, and the width of the plate is such as to permit it to be drawn endwise through the cylinder opening, and the thickness of the plate is such as not to interfere with the passage of carbid through the cylinder. The hopper is provided with a screw-cap 22 for charging it.

The top of the bell 5 has a tube 23 depending therefrom into the water reservoir and a stirring rod 24 extends through this tube and is provided at its upper end (on the outside of the float) with an operating lever 25, and at its lower end with an agitator or stirrer 26, which is operated near the bottom of the said reservoir and adjacent to a drain discharge opening 27 from the said reservoir which is provided with a drain and water supply pipe 28 connected with said opening, and this pipe has a T-coupling 29 for a valve or gate 30, and a water pipe 31 which extends vertically from said coupling and terminates parallel with the top of the cylinders 1 and 2. Said pipe connections being made with the projecting end of the cylinder 2, and a drain discharge pipe 31^a.

A gas pipe 32 extends from above the

water reservoir and through the latter near the bottom, whence said pipe extends upwardly through a filter 33, for the delivery of filtered gas from the generator. Such filter comprises an air-tight casing 34, sealed at both ends with the pipe 32, and this pipe has a partition or plug 35, therein central of the casing 34, and said pipe is provided with one or more gas apertures 36 at a short distance from the inner side of the top and bottom of the casing 34; and a packing of felt and other suitable material 37 fills the space between the pipe 32 and the casing 34, so as to leave a gas chamber 38 around the said apertures and at each end of the packing.

The operation is as follows: The hopper being charged with carbid, and there being no pressure to hold the bell in raised position, said bell descends and its cylinder 6 engages the plate 17, the continued downward movement of the bell carries said plate downwardly for opening the hopper-valve for the discharge of carbid into the water reservoir, whereupon gas will be evolved and the pressure thereof will raise the bell and the spring 16 will retract the stem 14 and close the hopper-valve. Simultaneously with the closing of said valve, gas is carried off by means of the pipe 32, through the filter. This operation is automatic so long as the hopper is supplied with carbid. The water supply pipe 31 is of the same height as the water reservoir so that it may show when the reservoir is full, and such pipe and the reservoir may be emptied by means of the valve 30, or said valve may be operated for waste or drain purposes without admitting air into the generator, which is made air-tight. It is obvious that the valve 30, must be closed for supplying water to the reservoir through the pipe 31. The agitator or stirrer may be operated during the operation of the generator loosening the sediment or slag for its exit through the drain pipe. The wire 20 and its slack chain holds the hopper in position and permits it to be removed, (when desired) by removing the hopper cap and unhooking the wire and pulling it through the cap-hole until it has tilted the plate 17 into the cylinder 6, through which the plate is pulled in removing the hopper. In replacing the hopper, the wire is pushed against the plate 17 until the latter hangs from the valve stem 14, free of the cylinder 6, then the wire is hooked to the top of the hopper, and the hopper-cap screwed into place.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

1. The combination, with an acetylene-gas generator, and a carbid feed hopper, of a valve for controlling such feed, a spring controlled valve-stem depending from the hopper, a plate depending from the stem and adapted to be operated by the bell of the generator for opening the valve, and means for operating said plate in removing the hopper, comprising a wire rod attached to and depending through the hopper and connected with the plate with the valve-stem.

2. The combination, with an acetylene-gas generator, a bell, a removable feed hopper, a hopper valve having a stem, a spring in the hopper for closing the valve, and a cylinder having an opening therethrough and secured to the bell, of a plate hanging from the valve stem and engaged by the cylinder in the downward movement of the bell for opening the valve, and means connecting the plate with the hopper for withdrawing the plate through the said cylinder opening in removing the hopper.

In witness whereof I hereunto set my hand in the presence of two witnesses.

JESSE T. FINLEY.

Witnesses:
J. W. KELLEY,
DICK RAGAN.